SASKATCHEWAN

Sand Verbena

Status: Endangered

(synonym: *Abronia micrantha*) (*Tripterocalyx micranthus*)

Species at Risk

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Description

Sand Verbena is an annual plant belonging to the Four-o'clock family, Nyctaginaceae. It grows 20 to 60 centimetres tall, branching near the base and spreading along the ground except for the stems tips, which turn upwards. Stems and leaf stalks are covered with sticky hairs. Leaves are in pairs on the stem, with stalks up to three centimetres long. They are smooth-edged, distinctly veined, oblong blades about one to three centimetres wide by two to six centimetres long. Leaves are narrowly wedge-shaped where they attach to the stalk.

From May to July, stalks with clusters of flowers grow from the points where leaves attach to the stem. At the base of the flower cluster are five bracts, similar to the leaves in color and texture, but only about two millimetres wide by less than ten millimetres long. The flowers have no petals, but a funnel-shaped tube six to 12 millimetres long encloses the stamens and ovary. This is topped by five whitish to green or yellow petal-like lobes, up to five millimetres wide. This structure remains attached to the developing fruit and enlarges into wings. Three wings

Saskatchewan distribution of Sand Verbena
(Abronia micrantha) *(synonym: Tripterocalyx micranthus)*
(adapted from Smith 1990).

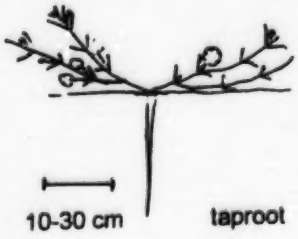
Sand Verbena

(Abronia micrantha, syn. Trypterocalyx micranthus)

Sand dock

(Rumex venosus)

Diagrams of growth form



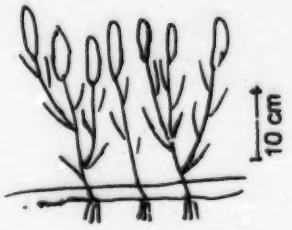
- Pale stems branch at the base only, and run along the ground

Stems and leaf stalks covered with sticky hairs

Annual

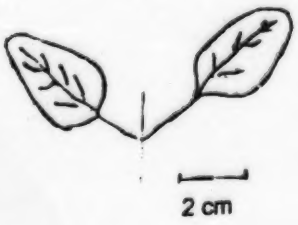
- Reddish-tinged stems vertical and branching along the length

rhizomes



Perennial
(Lives many years)

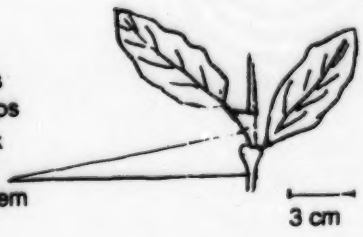
Leaves opposite



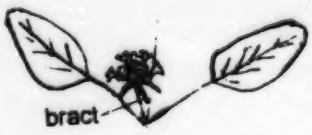
- Leaves sparsely hairy
- With rounded tips
- Long leaf stalk

Leaves alternate

- Hairless leaves
- With pointed tips
- Short leaf stalk
- Papery sheath encircling the stem



Diagrams of inflorescence



- Each cluster of flowers growing from the axil of a leaf
- Clusters all the way down the stems
- Leaf-like bracts under the flowers
- Inflorescence stalked, but each flower has no stalk
- Each clusters of fruits makes a sphere
- Flowers and fruits all season

- Flowers grouped in one elongated inflorescence, at the end of each stem
- No leaf-like bracts under the flowers
- Only one batch of flowers and fruits per season

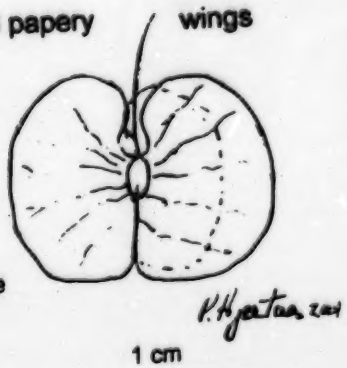
Fruit with 2-5 papery wings, usually 3

- Short stalk: 1-2 mm long
- Pinkish or peach-coloured wings, Strongly veined

- Fruits drop as they ripen

Fruit with 3 papery wings

- Long stalk : 1-2 cm long
- Red wings, with heart-shaped base
- Weakly veined, only midrib prominent
- Fruits can be retained on the plant after ripening



Sand Dock, for comparison

© Hope Johnson

usually develop, but there may be as many as five, or as few as two. These wings are slightly longer than wide, averaging two centimetres, but may reach three centimetres in length. The thin and papery wings are pinkish in colour, strongly veined, and may have sticky hairs on the surface. The seed is six to seven millimetres long, ovoid in shape, smooth, dull and yellow-brown. The wings of the fruit blacken with age.

Similar species

Sand Verbena might be confused with the superficially similar Sand Dock (*Rumex venosus*) which grows in similar habitats. Sand Dock is a perennial herb with wide-spreading underground rhizomes. Its stems are reddish-tinged and often branching along their length (not just near the base as for Sand Verbena). Its leaves alternate on the stem (not in pairs as for Sand Verbena) with stalks much shorter than the blades. At the base of each stalk is a whitish paper sheath that encircles the stem. Leaf blades are flat and leathery, narrowing to a point at both ends, five to 15 centimetres long and nearly half as wide. The flower clusters are at the stem tips, not arising from where the leaves attach to the stem.

Sand Dock's fruit is enclosed by a structure superficially similar to that of Sand Verbena, because it is also thin and papery, but with less conspicuous veins. A Sand Dock seed is enclosed within three pink to bright red "valves" which are slightly wider than long, up to three or more centimetres in width, and with a heart-shaped base whose lobes may actually overlap. The tip of the valve is also shallowly notched like the base of a heart. As the fruits ripen, the valves turn rusty-coloured.

Status

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed Sand Verbena as threatened in 1992. Listed as an endangered species in Saskatchewan in *The Wild Species at Risk Regulations*, Sand Verbena is protected on private, provincial, and federal lands under part V of *The Wildlife Act*.

Sand Verbena is found only in western North America. In Canada, the species occurs in mixed grassland areas of southwestern Saskatchewan along the South Saskatchewan River and southeastern Alberta in the Milk River area. Fewer than 1,000 plants occur in Canada and, in 1981, Saskatchewan reported fewer than 10 plants. There is currently no comprehensive population data available for Sand Verbena in Saskatchewan.

In the United States, Sand Verbena is found in Montana, North Dakota, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico, and California. It is rare in Kansas and Nebraska, and extirpated in South Dakota.

North American Distribution of Sand Verbena

(Abronia micrantha) (syn. Tripterocalyx micranthus)

LEGEND

States reporting populations of Sand Verbena 1992-2000

▲ Canadian populations of Sand Verbena

(adapted from Environment Canada, 2000, Smith et al. 1992 and Saskatchewan Conservation Data Centre, 2000).

Habitat

In Saskatchewan and Alberta, Sand Verbena is found in the mixed grass prairie region. The plant grows in dry, loose sands of sandhill areas, in desert or semi-arid conditions. Sand Verbena usually requires some element of drifting or unstable sand. The largest populations are found on hard packed fine sand on level ground.

Life Cycle

Sand Verbena is an ephemeral species, meaning it flowers early, sets seed and dies, all in a short period of time. This is an adaption of certain plants to desert-like environments. It allows the plant to avoid growing in the hot, dry mid-summer months. The plant flowers between May and August and drops fruits throughout the summer. It reproduces through wind-dispersed seeds. Research is necessary to gain more information on the life cycle of this plant.

Limiting Factors and Recovery Needs

In Saskatchewan, little is known about the required habitat. The only known population is located in open sand on the river banks of the South Saskatchewan River. These areas are not suited to agricultural development, nor are they likely to be. These sites are below the high water level and subject to flooding, which is probably a contributing factor in keeping the sand unstable.

In other jurisdictions, the major threat to the species is loss of habitat due to agricultural practices. Much of the Sand Verbena's habitat has been converted into cultivated crops.

Recovery Actions

There is currently no recovery plan for Sand Verbena. Remaining habitat for Sand Verbena should be managed to ensure continued survival of the species. Detailed research and monitoring of Sand Verbena and its habitat requirements is recommended in order to get a better understanding of the species and its requirements.

In many cases, the entire ecosystem is endangered and not just a specific species. These ecosystems are fragile and must remain undisturbed. The continued survival of all endangered species relies on protecting the habitats of the species at risk as well as the species themselves.

Important: It is important to note that all endangered species including plants are protected in *The Wild Species at Risk Regulations*, under part V of *The Wildlife Act*. Sand Verbena is protected on private, provincial and federal lands. It is unlawful to pick or collect endangered plants without a special permit.

If you observe Sand Verbena growing in the wild, your help by contacting the Saskatchewan Conservation Data Center online at www.biodiversity.sk.ca would be greatly appreciated.

Selected References

Please contact your local library or visit the Internet sites below for more information on Sand Verbena.

Environment Canada. 1999. Sand verbena. [Online]
http://www.speciesatrisk.gc.ca/Species/English/SearchDetail.cfm?SpeciesID=230
Last visited : March 13, 2001

Environment Canada. 2000. All species at risk (Map). [Online]
http://www.sis.ec.gc.ca/cgi-eas/endanew.exe
Last visited: March 13, 2001

Smith, Bonnie and Cheryl Bradley. 1992. Status report on the sand verbena (*Abronia micrantha torr.*).
The Committee on the Status of Endangered Wildlife in Canada.

June, 2001

Saskatchewan Environment and Resource Management

Fish and Wildlife Development Fund

NATURE SASKATCHEWAN

receives funding from

Saskatchewan LOTTERIES